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Interoperability Maturity Assessment for Public Services

WORKING GROUP

Members

Coordinator:

Anastasia Papastylianou apapas@ekdd.gr

National Centre for Public Administration and Local Government

Authors:

1) **Antonis Stasis - a.stasis@ydmed.gov.gr**

   Head of Directorate of the Ministry of Interior and Administrative Reconstruction

2) **Konstantinos Rantos krantos@teiemt.gr**

   Assistant Professor, Department of Informatics, TEI of Eastern Macedonia and Thrace

3) **Thodoris Papadopoulos thodoris@thodoris.net**

   General Secretariat of Coordination

Evaluators:

1) **Merkos Margaritopoulos - mermar@ekdd.gr**

   Head of Thessaloniki Regional Training Institute

2) **Efthimios Tambouris - tambouris@uom.gr**

   Associate Professor, University of Macedonia, Thessaloniki, Greece.

Interoperability Maturity Assessment

For

Public Services

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1   SCOPE OF IMM

By definition, the aim of the IMM Model is to assess interoperability of a public service i.e. the relation and the connection that a public service has with the external environment. From that point of view, any relation to the internal environment is not taken into account as it is regarded not relevant to interoperability.

From that point of view IMM can be used for the following indicative purposes:

1) To assess a public service in order to derive recommendations that can help improving the service to become more interoperable,

2) To create a comparative assessment for similar services that are offered by different organizations or different governments and countries as benchmarking.

2 INTRODUCTION TO THE INTEROPERABILITY MATURITY MODEL

The objective of this section is to assist trainees to:

- Understand the services that will be used as reference use cases for the evaluation with IMM.

- Refer to good practices for interoperable electronic public services

2.1 Introducing the IMM

The following components are crucial for the interoperability of a service and therefore they have been reflected to specific sections of the IMM questionnaire.

Service Delivery (B) – Providing end-users access to the public service.

Service Consumption (C) – Consumption of reusable machine-to-machine services from other public administrations and businesses. This can include the consumption of functionalities, base registry information and security services for example.

Service Management (D) – Controlling and monitoring the process flow related to service interactions with the external domain from trigger to outcome. This area includes Service Management aspects such as enterprise architecture, procurement, cost-benefit analysis and the provisioning of the services towards other administrations or businesses.

The definition of the **Internal Domain** and the **External Domain** is crucial for the description of the service. Ideally internal domain services are the ones that are produced in the context of the service to be assessed, typically by the same organization or department.

External Domain Services are the ones produced by other organizations or departments and consumed for the provision of the public service to be assessed, as well as from other services.

The maturity of the interoperability can be mapped to the following scale as shown in Table 1.

Table 1: Interoperability maturity levels

Maturity level	Maturity stage	Interpretation
1	Ad Hoc	Poor interoperability – the service has almost no interoperability in place
2	Opportunistic	Fair interoperability – the service implements some elements of interoperability best practices
3	Essential	Essential interoperability – the service implements the essential best practices for interoperability
4	Sustainable	Good interoperability – all relevant interoperability best practices are implemented by the public service
5	Seamless	Interoperability leading practice – the service is a leading example for others

Typical examples that can be analyzed using the IMM model are:

  I.   A doctor wants to have access to a patient's health record,

  II.   An economic operator that can participate in a public procurement procedure,

On the other hand, services that are not addressed at specific users and are either part of a general infrastructure, such as a telecommunication network or machine to machine services cannot be assessed using IMM model in its current form.

3   EXAMPLES OF PUBLIC SERVICE DEFINITION

For the purposes of this document we will use the following examples of services to be assessed:

1) Business Registration service.

2) e-Administrative Fee, i.e. a public service that allows citizens and businesses to pay fees related to the use of other public services. This service typically produces a unique digital code which is used to complete an ePayment transaction with a public authority. Based on this code, the payment can be made via banks that support online payment or by credit / debit / prepaid card through the e-Administrative Fee website.

One of the most critical tasks that have to be undertaken when assessing a public service is its unambiguous definition which includes the end-user group that the service is addressed to, the starting and ending points, the outcomes and the channels through which this service is provided.

It is important to stress out that an inaccurate definition of the service might lead to misleading results. For instance, the end-users of the public services related to the Business Registration is the Business Person that aims to establish a new legal entity e.g. a limited company or a personal company. The public service of the business registration may be offered electronically directly to the Business Person or can be offered through a counter/desk i.e. a notary depending on the legislation of a country.

If the above two attributes are assigned different values the assessment of the same public service will most likely be different. For example, if the service is offered through a notary which makes use of the Business Registration service, the end-user group becomes the

notaries, instead of the Business Person. This might alter the results as the service processes might differentiate depending on the end-user group.

In another service definition, the service being assessed could be the one provided by the notary, which makes use (consumes) the Business Registration Service, on behalf of the Business Person. In that case the service being assessed is different.

3.1   Description of the Business Registration Service:

In this section, the attributes and processes that comprise the Business registration service are being defined.

Business registration is a crucial service across Europe since it allows the update of the information that a Business Registry offers. The role of business registries defined in the paragraph 1 of Article 3 of Directive 2009/101/ EC (OJ L 258 / 1.10.2009) and is fundamental for protecting the interest of the members of a company and the third parties that cooperate with the company. Moreover the Services Directive (2006/123/EC[1]) was the main driver for the creation of Points of Single Contact that offer electronic services to the Business Persons (either natural of legal) for registering either a company or an activity to the member states across Europe. The business registries across Europe must also be connected therefore a lot of interoperability work has been done in order to define the semantics of the information that should be exchanged. The Business registry interconnection is described in the Directive 2012/17/ EU.

Last but not least according to the directive EU 2015/849 for the prevention of the use of the financial system for the purposes of money laundering it is crucial that the information for the beneficial owners i.e. the shareholders of a company should be exchanged.

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[1]http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:376:0036:0068:en:pdf

Considering the above mentioned legal framework one can easily understand that the Business Registration Service across Europe is generally offered electronically by a Single point of contact and a lot of semantic work has been done in the direction of business Registry interconnection and the exchange of information for beneficial owners.

This is a hypothetical service that is used only as an example to show the potential differences according to the interoperability maturity level and provide explanations for the different potential answer in the IMM questionnaire.

The Business Registration Service is being offered using different delivery channels. In some countries depending on the type of company only notaries can use this service therefore the Business Person uses the service only through a counter/desk. In some other countries the service is being offered electronically and some specific information can be submitted using postal services. In some other countries the service is being offered fully electronically. In some countries the principle of no wrong door is being applied and more delivery channels are being offered.

3.1.1 Preconditions

The end user that will use the service must be typically registered in a base registry and be able to be authenticated in order to use the service. Moreover, a digital signature may be required and, therefore, the end user should also have a qualified digital certificate for digital signature. The user will collect all the supporting documents and information that is required to use the service if this information cannot be retrieved by consuming other interoperable services.

3.1.2 Flow of events

1. The user uses his/her credentials to login to the website that the service is offered.

2. In case of an interoperable service the data and documents required can be retrieved and presented in prefilled forms.

3. The user begins the process to register the company.

4. The website presents the types of companies that can be electronically registered.

5. The user selects the type of company and the location for the seat of the company. The address of the seat of the company can be described using specific semantics standards.

6. The Business Person begins filling in the forms, creates a first draft and uploads the required documents as attachments to the application. The main forms are:

   I. The forms for the selection of the Company name and the alternative name. This form requires checking the proposed name and alternative name against existing names that reside in the business registry. It is not allowed for two companies to have similar name or alternative name as this may confuse the consumers.

   II. The forms that are related to the activities of the company. This information is needed for taxations purposes and should be provided according to specific standards.

   III. The forms related to the founders, management board, signatory power, and auditors. These forms can be partially prefilled using information from base registries regarding the natural persons that have the above mentioned roles in the company. The rest of the information that is required for the business registration service is either provided by the end user or is being manually extracted from additional supporting documents that are being submitted by the end user.

   IV. The forms that the seat of the company, the capital[2], the articles of association are declared and/or submitted[3].

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[2] In the context of Business Registration Service the 'capital' is the asset that a company possesses mainly for liability reasons. The capital can be a deposit in a bank, a bank insurance guaranty, any other assets such as property, belongings etc.

[3] The articles of association or the constitution of a company is a private agreement that the founders of the company sing and describes the scope of the company, the way the company is going to function, the role of the management etc. This can be inserted directly to the Business Registration form or in some countries can be made by a notary. In the case that the private agreement is made by the notary then is being submitted to the application form.

V. The bank/insurance certificates either for the fee payment or the capital deposit. This information should be retrieved from banks and/or insurance institution.

7. The service owner verifies the provided information and registers the company to the Business Registry.
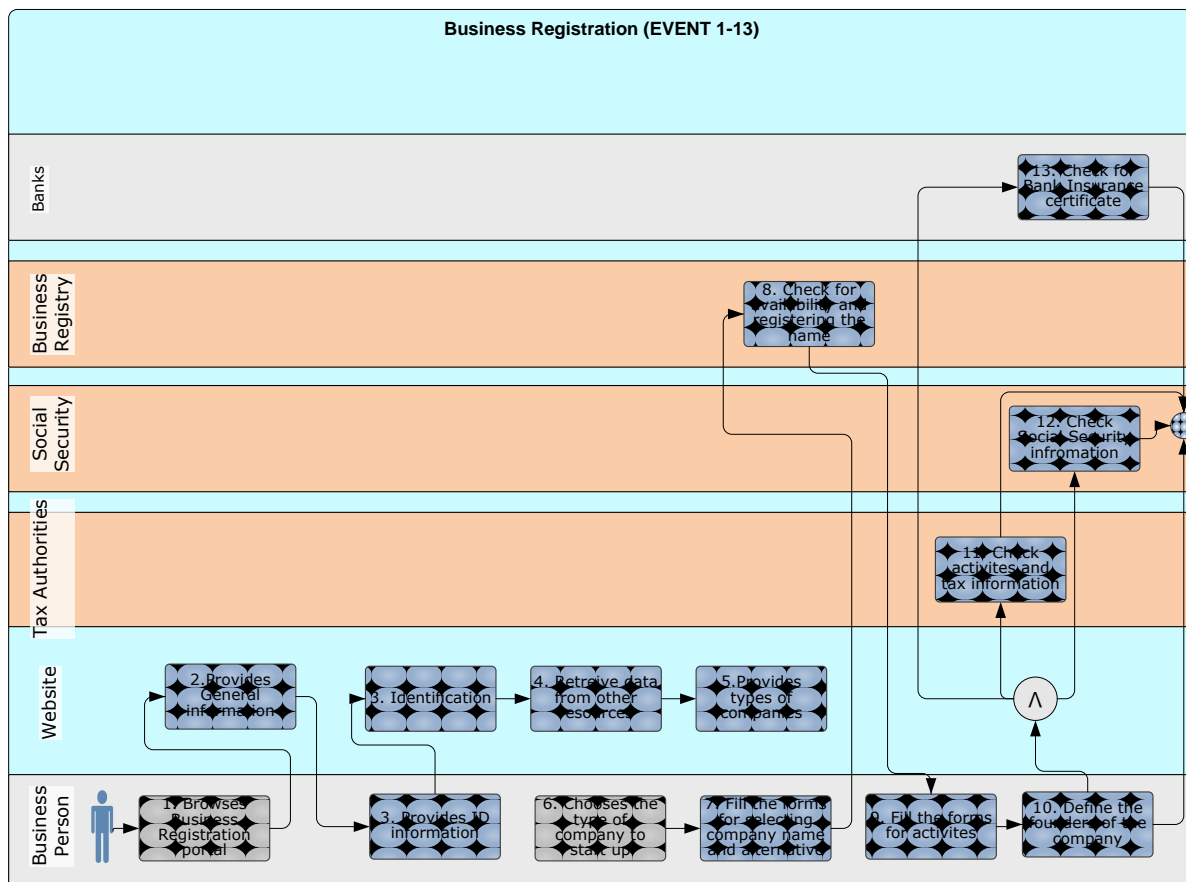

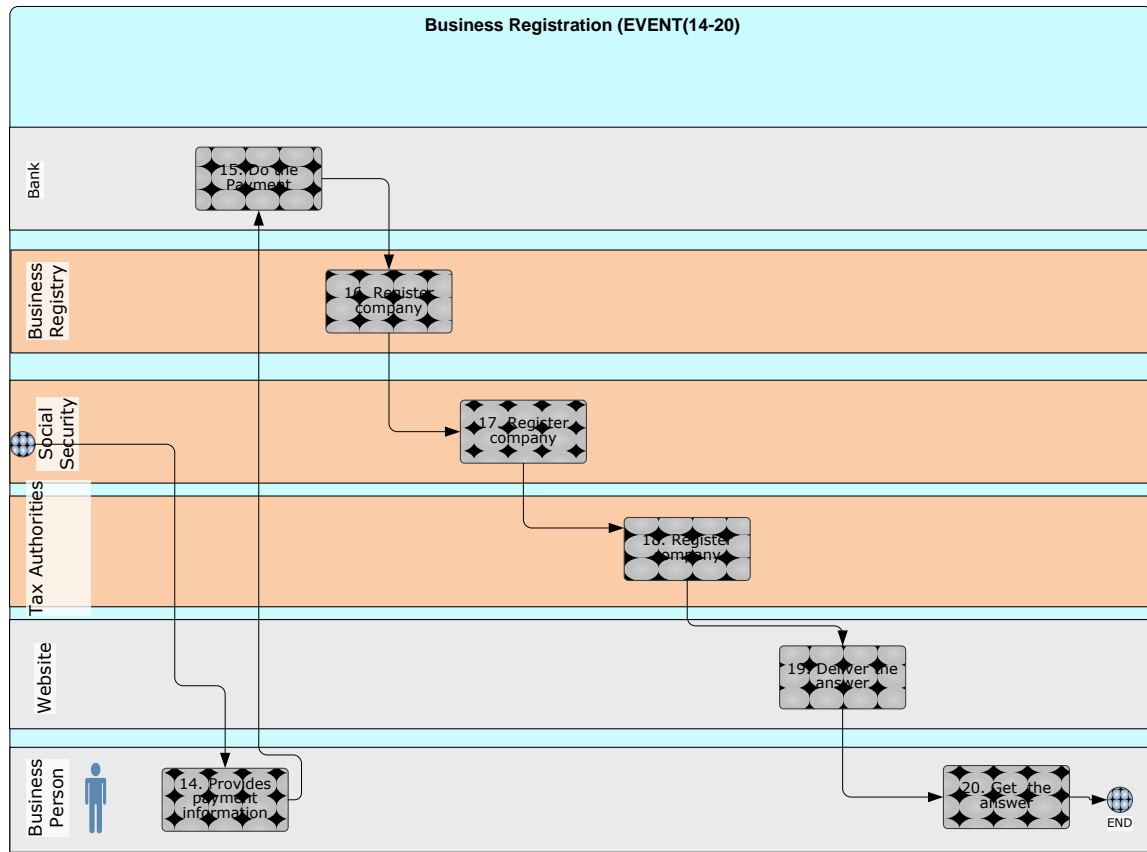*Figure 1: Business Registration flow diagram - Events 1-13*

Figure 2: Business Registration flow diagram - Events 14-20

3.1.3   Output – Post Condition

The newly registered company gets a unique identifier that is a number from the business Registry and/or the tax authorities.

Optional: In some cases the legal representative of the company gets the necessary credentials for accessing other related public services.

3.2   Description of the e-administrative fee Service

The e-Administrative Fee (or e-Fee for simplicity) is an electronic Service offered to citizens and businesses and issues an electronic fee which is a token in the form of a unique digital code that is submitted to a public authority as part of another public service to complete the required payment for using this service. This token becomes valid as soon as the interested party pays the corresponding fee either via banks' online payment systems or by credit / debit / prepaid card through the e-Administrative Fee website. The e-administrative fee service allows the central control of government revenue originating from the provision of public services to citizens and businesses.

The e-administrative fee service is being triggered by a citizen or a business representative who initiates the transaction provided by the e-administrative fee website. The service is accessible through different channels and can be reused from many other public authorities. The outcome, i.e. the valid tokenized fee, can be used in other electronic or conventional services. Following the issuance of the valid tokenized fee the user can either submit it in the context of using another public service to complete a transaction related to it, or reclaim money due to unwillingness to spend it. Both of these tasks are outside of the e-administrative fee public service analysed in this document. The same stands for the clearance procedure followed by the e-administrative fee public authority.

3.2.1   Prerequisites

The following requirements shall be met for the sound provision of the e-Administrative Fee service.

- The corresponding fee provided to interested parties must be registered so that the predefined cost and the beneficiaries have been defined.

3.2.2   Flow of events

The e-Administrative Fee includes the following process steps.

1. The end user visits the e-Administrative Fee website and selects whether he/she wants to proceed as an authenticated user or not.

    I. Authenticated user: the end user (citizen or business), that has already registered with the Tax Registry service, is authenticated in order to apply for a unique identifier of the fee he/she wants to pay. The required fields "VAT number", "Surname", "Name", and "Father's Name" are pre-filled. The information is retrieved from the Tax Registry.

    II. Non-authenticated user: The end user fills in his/her "VAT number", his/her "mother's name", "date of birth", "Surname", "Name", as well as "Father's name".

2. Following automated or not completion of the required fields, the user selects the e-fee he/she wants to pay by choosing the following:

    I. Administrative Fee category

    II. Administrative Fee Type

3. Upon completing the form the user can submit it. The result is a unique e-Fee payment code and a deadline for paying the fee. This information can be printed and/or sent by email, assuming the user has provided a valid email address.

4. The next step in the process is the fee's payment through the following channels: by visiting a bank's branch or a post office, by using e-banking services, or by credit card (on the e-Administrative Fee portal). Note that due to off-line payment options, the required payment is not necessarily accomplished on-line. In any case, the stakeholders utilize the unique e-Fee payment code to unambiguously identify the transaction.

I. Payments made using a credit/debit card are accomplished real-time and the service completes upon conformation of a successful credit card payment. The e-administrative fee utilizes payment services provided by the interbanking system.

II. If the payment is successfully made using the online banking system of one of the collaborative banks, the corresponding bank sends, by the end of day, a list of e-Fee payment tokens that have been processed, i.e. a payment has been made.

5. Upon successful payment the applicant can use the valid token to pay the service he/she is willing to use. The public service informs the e-Fee service about the use of the corresponding token.
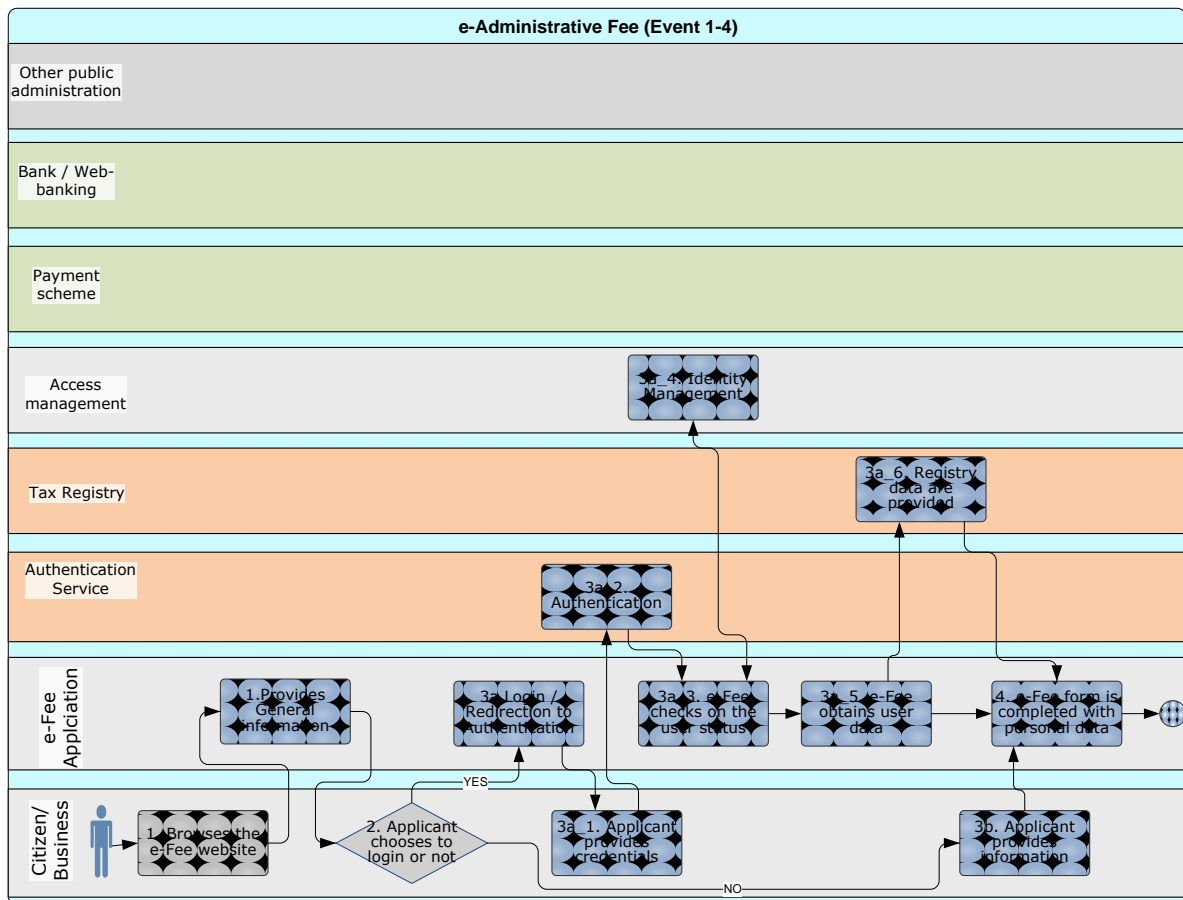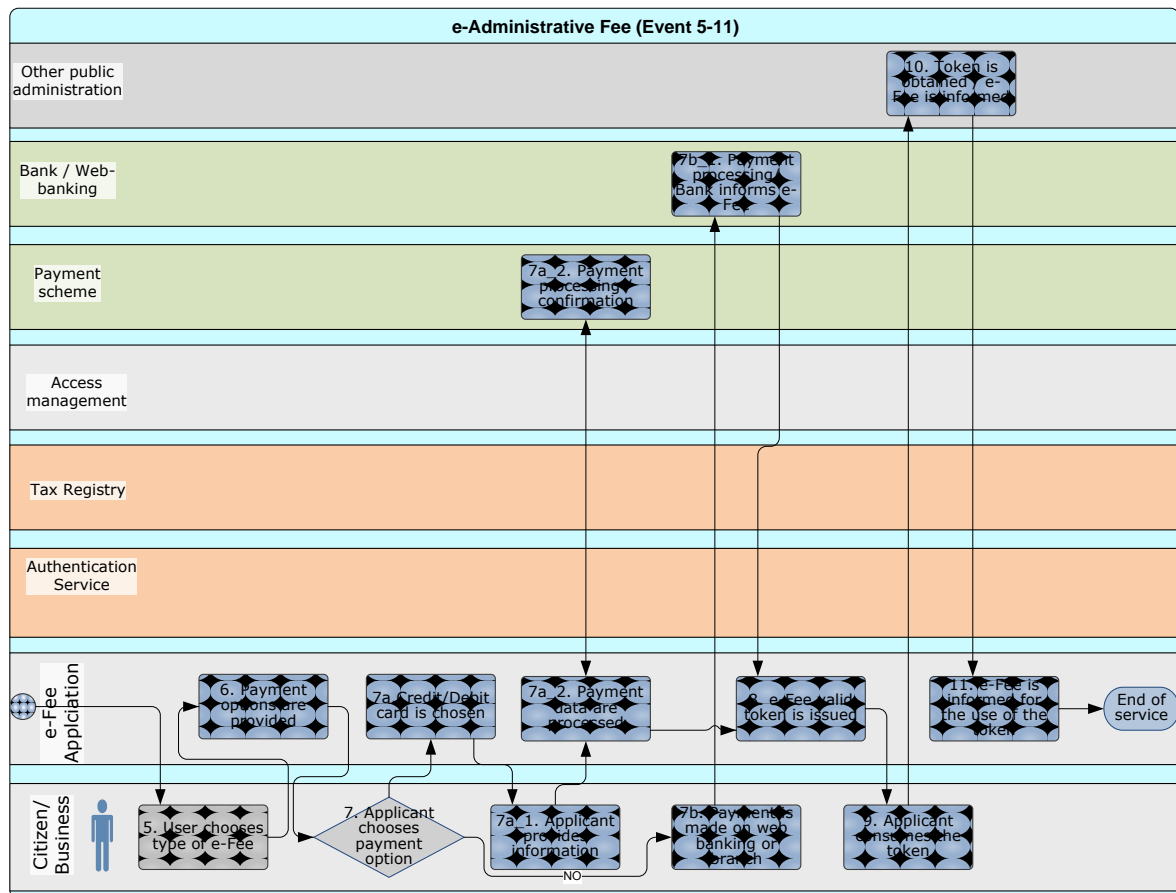
Figure 3: e-Fee flow diagram – Events 1-4

Figure 4: e-Fee flow diagram – Events 5-11

3.2.3 Output – Post Condition

The user gets a token, i.e. a unique identifier which is used in order to do the payment either electronically e.g. e-banking services, credit or conventionally (visit a bank's branch or a post office).

Upon successful payment of the e-Fee where the status of the token changes to valid and the applicant has a valid (paid) e-Fee digital code which he/she can use to pay another public service. This is the last step of the service, i.e. the service completes upon using the e-Fee token to pay another service.